National Institute of Environmental Health Sciences

Climate change and mortality in vienna-A human biometeorological analysis based on regional climate modeling

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Abstract:

The potential development of heat-related mortality in the 21th century for Vienna (Austria) was assessed by the use of two regional climate models based on the IPCC emissions scenarios A1B and B1. Heat stress was described with the humanbiometeorological index PET (Physiologically Equivalent Temperature). Based on the relation between heat stress and mortality in 1970-2007, we developed two approaches to estimate the increases with and without long-term adaptation. Until 2011-2040 no significant changes will take place compared to 1970-2000, but in the following decades heat-related mortality could increase up to 129% until the end of the century, if no adaptation takes place. The strongest increase occurred due to extreme heat stress (PET ≥ 41 °C). With long-term adaptation the increase is less pronounced, but still notable. This encourages the requirement for additional adaptation measurements. © 2010 by the authors.

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Resource Description

Climate Scenario :

specification of climate scenario (set of assumptions about future states related to climate)

Special Report on Emissions Scenarios (SRES), Other Climate Scenario

Special Report on Emissions Scenarios (SRES) Scenario: SRES A1, SRES B1

Other Climate Scenario: SRES A1B

Exposure :

weather or climate related pathway by which climate change affects health

Temperature

Temperature: Extreme Heat

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location: ☑

resource focuses on specific location

Non-United States

Non-United States: Europe

European Region/Country: European Country

Other European Country : Austria

Health Impact: ☑

specification of health effect or disease related to climate change exposure

Cardiovascular Effect, Morbidity/Mortality, Respiratory Effect

Cardiovascular Effect: Other Cardiovascular Effect

Cardiovascular Disease (other): cardiovascular mortality

Respiratory Effect: Other Respiratory Effect

Respiratory Condition (other) : respiratory mortality

Mitigation/Adaptation: ☑

mitigation or adaptation strategy is a focus of resource

Adaptation

Model/Methodology: ☑

type of model used or methodology development is a focus of resource

Exposure Change Prediction, Outcome Change Prediction

Population of Concern: A focus of content

Other Vulnerable Population: women

Resource Type: ☑

format or standard characteristic of resource

Research Article

Resilience: ☑

capacity of an individual, community, or institution to dynamically and effectively respond or adapt to shifting climate impact circumstances while continuing to function

A focus of content

Timescale: ☑

time period studied

Long-Term (>50 years)